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EXAMINER	
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ART UNIT	PAPER NUMBER
2643	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

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Office Action Summary	Application No. 09/444,723	Applicant(s) WOODING, JEFFREY
	Examiner Barry W Taylor	Art Unit 2643

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 July 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 40-41 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The Examiner is unable to determine from the originally filed specification as to how one of ordinary skill in the art would be able to make and use the invention. The specification provides no basis for the claimed subject matter. Specifically, as by way of example, claims 40-41 claim at least the terms “the measurement-related circuits including an incoming call-preventing circuit”. The specification does not support applicant’s claims language. Is this a prior art device?

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in European Patent Office (EPO) on 5/22/1998. It is noted, however, that applicant has not filed a certified copy of the (EPO 98304101.3) application as required by 35 U.S.C. 119(b).

Oath/Declaration

3. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: Applicant's have continuously stated that this application does **not** claim priority from EP 98304101.3 (see paper number 11 dated 7/5/02 bottom of page 4 and paper number 8 dated 9/28/01 top of page 7). Applicant's firstly claim priority in original filed oath or declaration but now have decided not too is **misleading to the Examiner**. The Examiner has repeatedly pointed this out to Applicant's. Corrective action is required.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "the measurement-related circuits including an incoming call-preventing circuit" as recited in claims 40 and 41 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6, 10-16, 29-30, 32-35, 38-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emerson et al (5,553,059 hereinafter Emerson) in view of Bella et al (6,212,258 hereinafter Bella) or Charland (5,550,894).

Regarding claims 1. Emerson teaches an apparatus for remotely measuring characteristics of a communication line (entire disclosure) comprising:

receiving means (#32, #42, #12 fig. 1) for connecting to a remote end of the communications line;

sender means (#22 figure 1) for connecting to the other end of the communications line;

the receiver means (#32, #42, #12 fig. 1) generating a signal in response to a selection of one of a plurality of characteristics of the line to be measured (Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65);

the sender means having detection means (#34 figure 1) for detecting the signal, and switching means (see switching circuit for loop back and pattern generator for the two loop back control circuitries figure 2, Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65);

such that on detection of the signal, and on the basis of the unique representation of the signal, the switching means is controlled to connect predetermined

circuitry across the line at the other end and at the remote end to enable a selected characteristic of the line to be measured (see switching circuit for loop back and pattern generator for the two loop back control circuitries figure 2, Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65).

According to Applicant, Emerson does not disclose switching predetermined circuitry across a communication line on the basis of a signal representing a characteristic selected for measurement (see Applicant's general argument on page 6 lines 14-18).

Bella teaches a network interface device that allows the twisted pair transmission line between the central office and the customer's port to be selectively switching from a normal monitoring mode into test mode (Title, abstract, col. 2 lines 1-23). Bella discloses that when a valid request signal is received from the central office on the twisted pair, the device is switched into test mode (columns 2-7 especially column 6 line 66 – column 7 line 23). Bella discloses that the request signal may be any number of forms. For instance, it could be a coded sequence of pulses sent from the central office (col. 3 lines 1-12) which in turn allows the central office determines a number of parameters (col. 3 lines 55-58).

Charland also discloses a network termination unit for simulating a plurality of fault conditions to allow a diagnostic routine to be performed on the telephone line at a remote location (abstract, columns 1-2). Charland discloses that the network termination unit in response to a trigger signal initiates predetermined switch actuation

sequence (col. 3 lines 7-66, col. 6 line 61 – col. 7 line 23, col. 8 lines 50-59, col. 9 line 1 – col. 12 line 63, col. 15 lines 1-65, col. 15 line 66 – col. 16 line 63).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to incorporate the interface device as taught by Bella or Charland so that request or trigger signal may be used to switch predetermined circuitry across communication line as taught by Bella or Charland thus enabling for remote testing of communication line by using a request or trigger signal.

Regarding claims 2, 30. Emerson teaches the signal is generated by signal generation means and is assigned a unique code such that the unique code is representative of a characteristic of the line to be measured (col. 1 lines 64-67, col. 2 lines 6-46, col. 3 lines 36-38, col. 3 line 66 – col. 4 line 67, col. 5 lines 1-66, col. 6 lines 27-67, col. 7 lines 1-65).

Regarding claim 3. Emerson teaches the apparatus wherein the signal assigned a unique code is represented by a sequence of pulses (col. 3 lines 53-65, col. 4 lines 6-30, col. 5 lines 17-66, columns 6-12).

Regarding claim 4. Emerson teaches the apparatus wherein on detection by the detection means of the signal, the signal is converted into a digital code (col. 3 lines 53-65, col. 4 lines 6-30, col. 5 lines 17-66, columns 6-12).

Regarding claim 5. Emerson teaches the apparatus further comprising processor means for receiving and processing the digital code representation of the signal (col. 3 lines 53-65, col. 4 lines 6-30, col. 5 lines 17-66, columns 6-12).

Regarding claim 6. Emerson teaches the apparatus wherein the switching means is controlled by the processor means to connect the predetermined circuitry on the basis of the particular code received and processed by the processor means (see switching circuit for loop back and pattern generator for the two loop back control circuitries figure 2, Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65).

Method claims 10-16 are rejected for the same reasons as apparatus claims 1-6 since the recited elements would perform the claimed steps.

Regarding claim 29. Emerson teaches an apparatus for remotely measuring characteristics of a communication line (entire disclosure) comprising:

receiving means (#32, #42, #12 fig. 1) for connecting to a remote end of the communications line;

sender means (#22 figure 1) for connecting to the other end of the communications line;

the receiver means (#32, #42, #12 fig. 1) generating a signal in response to a selection of one of a plurality of characteristics of the line to be measured (Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65);

the sender means having detection means (#34 figure 1) for detecting the signal, and switching means (see switching circuit for loop back and pattern generator for the two loop back control circuitries figure 2, Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65);

such that on detection of the signal, and on the basis of the unique representation of the signal, the switching means is controlled to connect at least one of the measurement-related circuits across the line at the other end and at the remote end to enable a selected characteristic of the line to be measured (see switching circuit for loop back and pattern generator for the two loop back control circuitries figure 2, Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65).

According to Applicant, Emerson does not disclose switching predetermined circuitry across a communication line on the basis of a signal representing a characteristic selected for measurement (see Applicant's general argument on page 6 lines 14-18).

Bella teaches a network interface device that allows the twisted pair transmission line between the central office and the customer's port to be selectively switching from a normal monitoring mode into test mode (Title, abstract, col. 2 lines 1-23). Bella discloses that when a valid request signal is received from the central office on the twisted pair, the device is switched into test mode (columns 2-7 especially column 6 line 66 – column 7 line 23). Bella discloses that the request signal may be any number

of forms. For instance, it could be a coded sequence of pulses sent from the central office (col. 3 lines 1-12) which in turn allows the central office determines a number of parameters (col. 3 lines 55-58).

Charland also discloses a network termination unit for simulating a plurality of fault conditions to allow a diagnostic routine to be performed on the telephone line at a remote location (abstract, columns 1-2). Charland discloses that the network termination unit in response to a trigger signal initiates predetermined switch actuation sequence (col. 3 lines 7-66, col. 6 line 61 – col. 7 line 23, col. 8 lines 50-59, col. 9 line 1 – col. 12 line 63, col. 15 lines 1-65, col. 15 line 66 – col. 16 line 63).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to incorporate the interface device as taught by Bella or Charland so that request or trigger signal may be used to switch predetermined circuitry across communication line as taught by Bella or Charland thus enabling for remote testing of communication line by using a request or trigger signal.

Regarding claim 38. According to Applicant, Emerson does not disclose switching predetermined circuitry across a communication line on the basis of a signal representing a characteristic selected for measurement (see Applicant's general argument on page 6 lines 14-18).

Bella teaches a network interface device that allows the twisted pair transmission line between the central office and the customer's port to be selectively switching from a normal monitoring mode into test mode (Title, abstract, col. 2 lines 1-23). Bella

discloses that when a valid request signal is received from the central office on the twisted pair, the device is switched into test mode (columns 2-7 especially column 6 line 66 – column 7 line 23). Bella discloses that the request signal may be any number of forms. For instance, it could be a coded sequence of pulses sent from the central office (col. 3 lines 1-12) which in turn allows the central office determines a number of parameters (col. 3 lines 55-58).

Charland also discloses a network termination unit for simulating a plurality of fault conditions to allow a diagnostic routine to be performed on the telephone line at a remote location (abstract, columns 1-2). Charland discloses that the network termination unit in response to a trigger signal initiates predetermined switch actuation sequence (col. 3 lines 7-66, col. 6 line 61 – col. 7 line 23, col. 8 lines 50-59, col. 9 line 1 – col. 12 line 63, col. 15 lines 1-65, col. 15 line 66 – col. 16 line 63).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to incorporate the interface device as taught by Bella or Charland so that request or trigger signal may be used to switch predetermined circuitry across communication line as taught by Bella or Charland thus enabling for remote testing of communication line by using a request or trigger signal.

Regarding claim 39. Emerson discloses the capability to determine transmission problems on the telephone line but does not explicitly describe using numeric value. Emerson indeed discloses using timed pulses (columns 3-7).

Bella teaches a network interface device that allows the twisted pair transmission line between the central office and the customer's port to be selectively switching from a normal monitoring mode into test mode (Title, abstract, col. 2 lines 1-23). Bella discloses that when a valid request signal is received from the central office on the twisted pair, the device is switched into test mode (columns 2-7 especially column 6 line 66 – column 7 line 23). Bella discloses that the request signal may be any number of forms. For instance, it could be a coded sequence of pulses sent from the central office (col. 3 lines 1-12) which in turn allows the central office determines a number of parameters (col. 3 lines 55-58) **including signal loss**.

Charland also discloses a network termination unit for simulating a plurality of fault conditions to allow a diagnostic routine to be performed on the telephone line at a remote location (abstract, columns 1-2). Charland discloses that the network termination unit in response to a trigger signal initiates predetermined switch actuation sequence (col. 3 lines 7-66, col. 6 line 61 – col. 7 line 23, col. 8 lines 50-59, col. 9 line 1 – col. 12 line 63, col. 15 lines 1-65, col. 15 line 66 – col. 16 line 63) so that **loop resistance** and line balance may be ascertained.

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to incorporate the interface device as taught by Bella or Charland so that request or trigger signal may be used to switch predetermined circuitry across communication line as taught by Bella or Charland thus enabling for remote testing of communication line by using a request or trigger signal.

Regarding claims 40-41. The following rejecting is being made for what is best understood by the Examiner due to 112 first paragraph rejection and drawing deficiencies listed above.

Emerson teaches loop back testing which inherently and/or obviously requires impedance matching.

Bella teaches testing for line loss. Bella also discloses isolating wire pair (columns 2-7).

Charland also discloses the importance of isolating wire pair (columns 1-4 and columns 8-17).

Regarding claim 42. Emerson shows using a oscillator (see bit patterns oscillating between different one's and zero's columns 4-6).

Bella teaches using oscillating frequencies (columns 3 and 7).

Charland also uses oscillator (90 figure 5).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to incorporate the interface device as taught by Bella or Charland so that request or trigger signal may be used to switch predetermined circuitry across communication line as taught by Bella or Charland thus enabling for remote testing of communication line by using a request or trigger signal.

Regarding claims 32-33. Emerson discloses the capability to determine transmission problems on the telephone line but does not explicitly describe line loss.

Bella teaches a network interface device that allows the twisted pair transmission line between the central office and the customer's port to be selectively switching from a normal monitoring mode into test mode (Title, abstract, col. 2 lines 1-23). Bella discloses that when a valid request signal is received from the central office on the twisted pair, the device is switched into test mode (columns 2-7 especially column 6 line 66 – column 7 line 23). Bella discloses that the request signal may be any number of forms. For instance, it could be a coded sequence of pulses sent from the central office (col. 3 lines 1-12) which in turn allows the central office determines a number of parameters (col. 3 lines 55-58) **including signal loss**.

Charland also discloses a network termination unit for simulating a plurality of fault conditions to allow a diagnostic routine to be performed on the telephone line at a remote location (abstract, columns 1-2). Charland discloses that the network termination unit in response to a trigger signal initiates predetermined switch actuation sequence (col. 3 lines 7-66, col. 6 line 61 – col. 7 line 23, col. 8 lines 50-59, col. 9 line 1 – col. 12 line 63, col. 15 lines 1-65, col. 15 line 66 – col. 16 line 63) so that **loop resistance** and line balance may be ascertained.

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to incorporate the interface device as taught by Bella or Charland so that request or trigger signal may be used to switch predetermined circuitry across communication line as taught by Bella or Charland thus enabling for remote testing of communication line by using a request or trigger signal.

Regarding claims 34-35. Emerson discloses the capability to determine transmission problems on the telephone line but does not explicitly use the term "line pair" when determining line loss. Furthermore, Applicant's contend that Emerson does not disclose switching predetermined circuitry across a communication line on the basis of a signal representing a characteristic selected for measurement (see Applicant's general argument on page 6 lines 14-18).

Bella teaches a network interface device that allows the twisted pair transmission line between the central office and the customer's port to be selectively switching from a normal monitoring mode into test mode (Title, abstract, col. 2 lines 1-23). Bella discloses that when a valid request signal is received from the central office on the twisted pair, the device is switched into test mode (columns 2-7 especially column 6 line 66 – column 7 line 23). Bella discloses that the request signal may be any number of forms. For instance, it could be a coded sequence of pulses sent from the central office (col. 3 lines 1-12) which in turn allows the central office determines a number of parameters (col. 3 lines 55-58).

Charland also discloses a network termination unit for simulating a plurality of fault conditions to allow a diagnostic routine to be performed on the telephone line at a remote location (abstract, columns 1-2). Charland discloses that the network termination unit in response to a trigger signal initiates predetermined switch actuation sequence (col. 3 lines 7-66, col. 6 line 61 – col. 7 line 23, col. 8 lines 50-59, col. 9 line 1 – col. 12 line 63, col. 15 lines 1-65, col. 15 line 66 – col. 16 line 63).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson to incorporate the interface device as taught by Bella or Charland so that request or trigger signal may be used to switch predetermined circuitry across communication line as taught by Bella or Charland thus enabling for remote testing of communication line by using a request or trigger signal

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 7-8, 17-18, 19-28, 31, 36-37 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emerson et al (5,553,059 hereinafter Emerson) in view of Bella et al (6,212,258 hereinafter Bella) or Charland (5,550,894) further in view of Barton et al (5,343,461 hereinafter Barton).

Regarding claims 7-8, 17-18 and 43. Emerson does not explicitly show using buttons. However, Emerson shows using the well-known command sequence to trigger a pattern generator (column 5). Emerson even provides the option of which pattern is to be generated.

Bella teaches a network interface device that allows the twisted pair transmission line between the central office and the customer's port to be selectively switching from a

normal monitoring mode into test mode (Title, abstract, col. 2 lines 1-23). Bella discloses that when a valid request signal is received from the central office on the twisted pair, the device is switched into test mode (columns 2-7 especially column 6 line 66 – column 7 line 23). Bella discloses that the request signal may be any number of forms. For instance, it could be a coded sequence of pulses sent from the central office (col. 3 lines 1-12) which in turn allows the central office determines a number of parameters (col. 3 lines 55-58).

Charland also discloses a network termination unit for simulating a plurality of fault conditions to allow a diagnostic routine to be performed on the telephone line at a remote location (abstract, columns 1-2). Charland discloses that the network termination unit in response to a trigger signal initiates predetermined switch actuation sequence (col. 3 lines 7-66, col. 6 line 61 – col. 7 line 23, col. 8 lines 50-59, col. 9 line 1 – col. 12 line 63, col. 15 lines 1-65, col. 15 line 66 – col. 16 line 63).

Barton discloses and old well-known method to facilitate performance monitoring that uses push-button to loop-up (i.e. activate) the interface so that a telephony company may localize suspect faults on the communication line (Title, abstract, column 37).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson in view of Bella or Charland to use push-buttons as taught by Barton so that the test procedure may be activated by pressing a button.

Regarding claim 24. Emerson teaches an apparatus testing a communications line so as to ascertain and measure a plurality of characteristics of the line, the apparatus comprising:

receiving means (#32, #42, #12 fig. 1) for connecting to a remote end of the communications line;

sender means (#22 figure 1) for connecting to the other end of the communications line;

the receiver means (#32, #42, #12 fig. 1) generating a signal in response to a selection of one of a plurality of characteristics of the line to be measured (Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65);

the sender means having detection means (#34 figure 1) for detecting the signal, and switching means (see switching circuit for loop back and pattern generator for the two loop back control circuitries figure 2, Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65);

the signal uniquely representation the selected characteristic ... (see switching circuit for loop back and pattern generator for the two loop back control circuitries figure 2, Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65).

detection means for detecting signal (Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-

67, col. 7 lines 1-65);

switching means for connecting the predetermined circuitry ...(Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65).

Emerson does not explicitly show using buttons. However, Emerson shows using the well-known command sequence to trigger a pattern generator (column 5). Emerson even provides the option of which pattern is to be generated.

Bella teaches a network interface device that allows the twisted pair transmission line between the central office and the customer's port to be selectively switching from a normal monitoring mode into test mode (Title, abstract, col. 2 lines 1-23). Bella discloses that when a valid request signal is received from the central office on the twisted pair, the device is switched into test mode (columns 2-7 especially column 6 line 66 – column 7 line 23). Bella discloses that the request signal may be any number of forms. For instance, it could be a coded sequence of pulses sent from the central office (col. 3 lines 1-12) which in turn allows the central office determines a number of parameters (col. 3 lines 55-58).

Charland also discloses a network termination unit for simulating a plurality of fault conditions to allow a diagnostic routine to be performed on the telephone line at a remote location (abstract, columns 1-2). Charland discloses that the network termination unit in response to a trigger signal initiates predetermined switch actuation sequence (col. 3 lines 7-66, col. 6 line 61 – col. 7 line 23, col. 8 lines 50-59, col. 9 line 1 – col. 12 line 63, col. 15 lines 1-65, col. 15 line 66 – col. 16 line 63).

Barton discloses and old well-known method to facilitate performance monitoring that uses push-button to loop-up (i.e. activate) the interface so that a telephony company may localize suspect faults on the communication line (Title, abstract, column 37). Barton also discloses and old well-known method to facilitate performance monitoring that uses push-button to loop-up (i.e. activate) the interface so that a telephony company may localize suspect faults on the communication line (Title, abstract, column 37). Barton even discloses that the decoder is smart enough to recognize both loop-up and loop-down commands and acts accordingly via relays (column 18 line 7+).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson in view of Bella or Charland to use push-buttons as taught by Barton so that the test procedure may be activated by pressing a button causing corresponding relays to latch or unlatch the circuitry required for testing.

Regarding claim 25. Emerson teaches the signal is generated by signal generation means and is assigned a unique code such that the unique code is representative of a characteristic of the line to be measured (col. 1 lines 64-67, col. 2 lines 6-46, col. 3 lines 36-38, col. 3 line 66 – col. 4 line 67, col. 5 lines 1-66, col. 6 lines 27-67, col. 7 lines 1-65).

Regarding claim 26. Emerson teaches the apparatus wherein the signal assigned a unique code is represented by a sequence of pulses (col. 3 lines 53-65, col. 4 lines 6-30, col. 5 lines 17-66, columns 6-12).

Regarding claim 27. Emerson teaches the apparatus further comprising processor means for receiving and processing the digital code representation of the signal (col. 3 lines 53-65, col. 4 lines 6-30, col. 5 lines 17-66, columns 6-12). Emerson teaches the apparatus wherein the switching means is controlled by the processor means to connect the predetermined circuitry on the basis of the particular code received and processed by the processor means (see switching circuit for loop back and pattern generator for the two loop back control circuitries figure 2, Title, abstract, col. 1 lines 55-67, col. 2 lines 4-46, col. 3 lines 5-65, col. 4 lines 2-3, 21-67, col. 5 lines 1-67, col. 6 lines 2, 14-67, col. 7 lines 1-65).

Regarding claim 28. Emerson does not explicitly show using buttons. However, Emerson shows using the well-known command sequence to trigger a pattern generator (column 5). Emerson even provides the option of which pattern is to be generated.

Bella teaches a network interface device that allows the twisted pair transmission line between the central office and the customer's port to be selectively switching from a normal monitoring mode into test mode (Title, abstract, col. 2 lines 1-23). Bella discloses that when a valid request signal is received from the central office on the twisted pair, the device is switched into test mode (columns 2-7 especially column 6 line 66 – column 7 line 23). Bella discloses that the request signal may be any number of forms. For instance, it could be a coded sequence of pulses sent from the central office (col. 3 lines 1-12) which in turn allows the central office determines a number of parameters (col. 3 lines 55-58).

Charland also discloses a network termination unit for simulating a plurality of fault conditions to allow a diagnostic routine to be performed on the telephone line at a remote location (abstract, columns 1-2). Charland discloses that the network termination unit in response to a trigger signal initiates predetermined switch actuation sequence (col. 3 lines 7-66, col. 6 line 61 – col. 7 line 23, col. 8 lines 50-59, col. 9 line 1 – col. 12 line 63, col. 15 lines 1-65, col. 15 line 66 – col. 16 line 63).

Barton discloses and old well-known method to facilitate performance monitoring that uses push-button to loop-up (i.e. activate) the interface so that a telephony company may localize suspect faults on the communication line (Title, abstract, column 37). Barton also discloses and old well-known method to facilitate performance monitoring that uses push-button to loop-up (i.e. activate) the interface so that a telephony company may localize suspect faults on the communication line (Title, abstract, column 37). Barton even discloses that the decoder is smart enough to recognize both loop-up and loop-down commands and acts accordingly via relays (column 18 line 7+).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson in view of Bella or Charland to use push-buttons as taught by Barton so that the test procedure may be activated by pressing a button causing corresponding relays to latch or unlatch the circuitry required for testing.

Regarding claim 37. Emerson does not disclose switching predetermined circuitry across a communication line on the basis of a signal representing a

characteristic selected for measurement (see Applicant's general argument on page 6 lines 14-18).

Bella teaches a network interface device that allows the twisted pair transmission line between the central office and the customer's port to be selectively switching from a normal monitoring mode into test mode (Title, abstract, col. 2 lines 1-23). Bella discloses that when a valid request signal is received from the central office on the twisted pair, the device is switched into test mode (columns 2-7 especially column 6 line 66 – column 7 line 23). Bella discloses that the request signal may be any number of forms. For instance, it could be a coded sequence of pulses sent from the central office (col. 3 lines 1-12) which in turn allows the central office determines a number of parameters (col. 3 lines 55-58).

Charland also discloses a network termination unit for simulating a plurality of fault conditions to allow a diagnostic routine to be performed on the telephone line at a remote location (abstract, columns 1-2). Charland discloses that the network termination unit in response to a trigger signal initiates predetermined switch actuation sequence (col. 3 lines 7-66, col. 6 line 61 – col. 7 line 23, col. 8 lines 50-59, col. 9 line 1 – col. 12 line 63, col. 15 lines 1-65, col. 15 line 66 – col. 16 line 63).

Barton discloses and old well-known method to facilitate performance monitoring that uses push-button to loop-up (i.e. activate) the interface so that a telephony company may localize suspect faults on the communication line (Title, abstract, column 37). Barton also discloses and old well-known method to facilitate performance monitoring that uses push-button to loop-up (i.e. activate) the interface so that a

telephony company may localize suspect faults on the communication line (Title, abstract, column 37). Barton even discloses that the decoder is smart enough to recognize both loop-up and loop-down commands and acts accordingly via relays (column 18 line 7+).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson in view of Bella or Charland to use push-buttons as taught by Barton so that the test procedure may be activated by pressing a button causing corresponding relays to latch or unlatch the circuitry required for testing.

Method claims 19-23 and 36 are rejected for the same reason as apparatus claims 24-28 and 37 since the recited apparatus would perform the claimed steps.

Regarding claim 31. Emerson does not explicitly show relays.

Bella teaches a network interface device that allows the twisted pair transmission line between the central office and the customer's port to be selectively switching from a normal monitoring mode into test mode (Title, abstract, col. 2 lines 1-23). Bella discloses that when a valid request signal is received from the central office on the twisted pair, the device is switched into test mode (columns 2-7 especially column 6 line 66 – column 7 line 23). Bella discloses that the request signal may be any number of forms. For instance, it could be a coded sequence of pulses sent from the central office (col. 3 lines 1-12) which in turn allows the central office determines a number of parameters (col. 3 lines 55-58).

Charland also discloses a network termination unit for simulating a plurality of fault conditions to allow a diagnostic routine to be performed on the telephone line at a remote location (abstract, columns 1-2). Charland discloses that the network termination unit in response to a trigger signal initiates predetermined switch actuation sequence (col. 3 lines 7-66, col. 6 line 61 – col. 7 line 23, col. 8 lines 50-59, col. 9 line 1 – col. 12 line 63, col. 15 lines 1-65, col. 15 line 66 – col. 16 line 63).

Barton discloses and old well-known method to facilitate performance monitoring that uses push-button to loop-up (i.e. activate) the interface so that a telephony company may localize suspect faults on the communication line (Title, abstract, column 37). Barton also discloses and old well-known method to facilitate performance monitoring that uses push-button to loop-up (i.e. activate) the interface so that a telephony company may localize suspect faults on the communication line (Title, abstract, column 37). Barton even discloses that the decoder is smart enough to recognize both loop-up and loop-down commands and acts accordingly via relays (column 18 line 7+).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson in view of Bella or Charland to use push-buttons as taught by Barton so that the test procedure may be activated by pressing a button causing corresponding relays to latch or unlatch the circuitry required for testing.

7. Claims 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Emerson et al (5,553,059 hereinafter Emerson) in view of Bella et al (6,212,258 hereinafter Bella) or Charland (5,550,894) further in view of Bass (3,920,975).

Regarding claim 9. Emerson does not explicitly show a low frequency signal.

Bella teaches a network interface device that allows the twisted pair transmission line between the central office and the customer's port to be selectively switching from a normal monitoring mode into test mode (Title, abstract, col. 2 lines 1-23). Bella discloses that when a valid request signal is received from the central office on the twisted pair, the device is switched into test mode (columns 2-7 especially column 6 line 66 – column 7 line 23). Bella discloses that the request signal may be any number of forms. For instance, it could be a coded sequence of pulses sent from the central office (col. 3 lines 1-12) which in turn allows the central office determines a number of parameters (col. 3 lines 55-58).

Charland also discloses a network termination unit for simulating a plurality of fault conditions to allow a diagnostic routine to be performed on the telephone line at a remote location (abstract, columns 1-2). Charland discloses that the network termination unit in response to a trigger signal initiates predetermined switch actuation sequence (col. 3 lines 7-66, col. 6 line 61 – col. 7 line 23, col. 8 lines 50-59, col. 9 line 1 – col. 12 line 63, col. 15 lines 1-65, col. 15 line 66 – col. 16 line 63).

Bass teaches a remote test and control system that is compatible with any type of signaling system whether it be strictly polled wherein each remote is sequentially addressed or a multiplex arrangement, frequency or time domain, permitting more than

one communication to take place simultaneously (column 5). Bass discloses using complex frequencies with a carrier frequency of 300 HZ and a data rate of 50 baud permits the command signals to be transmitted at a lower frequency avoiding interference between data and command signals (columns 1-16).

Therefore, it would have been obvious for any one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Emerson in view of Bella or Charland to use the frequency scheme as taught by Bass so that command signals may be transmitted at a lower frequency than data signals thus avoiding interface.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry W. Taylor whose telephone number is (703) 305-4811. The examiner can normally be reached on Monday-Friday from 6:30am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (703) 305-4708. The fax phone number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Technology Center 2600 customer service Office whose telephone number is (703) 306-0377.

CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600